

## CLAIMS:

1. A gas bearing system comprising two opposing and substantially parallel bearing surfaces (2,4) and at least one gas duct (6) for supplying gas to the bearing gap (5) between said bearing surfaces (2,4), characterized by a cavity (10,14,15,18,19) having a content between  $0.001 \text{ cm}^3$  and  $0.2 \text{ cm}^3$ , which cavity (10,14,15,18,19) is connected to said bearing gap (5) through an orifice (7,11,16,17,20,21).  
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2. A gas bearing system as claimed in claim 1, characterized in that the content of the cavity (10,14,15,18,19) is between  $0.001 \text{ cm}^3$  and  $0.1 \text{ cm}^3$ .
- 10 3. A gas bearing system as claimed in any one of the preceding claims, characterized in that the diameter of said orifice (7,11,16,17,20,21) is between 0.05 mm and 0.3 mm, preferably between 0.1 mm and 0.2 mm.
- 15 4. A gas bearing system as claimed in any one of the preceding claims, characterized in that one of said bearing surfaces (2) comprises a recessed area (13) in which the distance between said two bearing surfaces (2,4) is larger than the distance between said two bearing surfaces (2,4) in the portion of said bearing gap (5) surrounding said recessed area (13).
- 20 5. A gas bearing system as claimed in any one of the preceding claims, characterized in that more than one cavity (10,14,15,18,19) is connected to said bearing gap (5).
- 25 6. A gas bearing system as claimed in claim 5, characterized in that the cavities (10,14,15,18,19) have a different content, the difference being more than 10 %, preferably more than 20 %, more preferably more than 50 %.

7. A gas bearing system as claimed in claim 5 or 6, characterized in that each cavity (10,14,15,19) is connected directly with said bearing gap through an orifice (7,11,16,17,21).

5 8. A gas bearing system as claimed in claim 5, characterized in that one of the cavities (18) is connected to another cavity (19) through an orifice (20).

9. A gas bearing system as claimed in claim 8, characterized in that more than two cavities (18,19) are interconnected through orifices (20).